

commerce, enabling the speculating devotee, who may be first in consulting the oracle, to steal a march on his less ardent or sagacious fellow, thereby "netting 50*l.* in a quarter of an hour," by nutcracking, at least, if not by over-reaching, his friend. What we have more particularly in our eye at present is, the alleged existence of certain malpractices of those devotees of the commercial god—the Americans—of a kindred order, though of a slightly darker shade; more akin, indeed, to the dark than to the bright side of the two-faced patron of commerce, trickery, and thieving. The malpractices complained of are said to have occurred at New York, where speculators "have managed to get the business news from England in advance of the press, and in this way have 'made great operations.' One or two more such instances of abuse," adds our authority, the *New York Correspondence*, "will effect a very good object,—forcing the telegraph, like the mail-post, into the exclusive hands of the government."

Sir,—In the new edition of Templeton's "Engineers and Contractors' Pocket Book," a mistake occurs, to which I beg to allude through your most practical columns, because it is in an article of considerable interest, on the electric telegraph, and the passage in question is likely to mislead, with regard to one of the fundamental laws of electro-magnetism.

It is stated, that "if we imagine a man to have the (electric) current transmitted through his body, the positive wire being applied to his feet, and the negative to his head, so that the current flows from his feet upwards, then a magnetic needle suspended freely before him, will place itself at right angles to his body, the north pole being to his left, and the south to his right. If he turn half round, so as to present his back to the needle, or if the wires be reversed, the needle will place itself in an opposite position."

The first part of this latter statement (in italics) is surely incorrect. When once a needle has been deflected by an electric current in a particular direction, it will not alter its position while the current exists, unless either—1st, The direction of the current, or 2nd, The situation of the wire with respect to the needle, or 3rd, The situation of the needle with respect to the wire, be altered. Either one of these alterations would produce a variation in the needle; but the turning half round of a man, or the twisting half round of a portion of the connecting wires on its own axis, if it were made capable of such a motion, would have no effect on the needle. The man's right hand would be where his left had been, and that would be the only change.

I am, Sir, &c.,

A. D.

#### SUBJECTS FOR PRIZE ESSAYS.

AMONG the subjects on which the council of the Institution of Civil Engineers invite communications, for premiums, are the following:—

1. The best mode of combining materials, by arranging or cementing them together, so as to insure uniformity of action from change of temperature.
2. On the construction of retaining and wharf walls, with examples of failure and the causes.
3. The construction of piers and moles, whether solid or on arches, in a tideway.
4. The conveyance of fluids in pipes, under pressure, and the circumstances which usually affect the velocity of their currents; with accounts of water-works and gas-works.
5. The construction of girder bridges, whether of iron or timber.
6. The construction of wrought-iron roofs, for covering considerable areas.
7. The internal arrangements of the termini, and intermediate stations of railways, whether for passengers or merchandise; and whether independent of, or connected with, inland navigation.
8. The various modes of boring artesian wells, and the geological formations which have been found most productive of water.

The communications must be forwarded by the 31st of May next:

#### THE ANCIENT CHURCH RUINS AT DONCASTER,

DISCLOSED IN RAZING THE OLD TOWN-HALL.

THE ruins of the very ancient church or chapel of St. Mary Magdalene have appeared like a shadow, and so they are likely to depart; for the very necessity under which they have come to be disinterred from the less ancient buildings in which they were embodied, in a manner compels their final demolition, in order to make way for the new buildings to be erected in their place.

The attention and interest of the Archaeological Institute, however, have been engaged on behalf of their preservation; and it is to be hoped that "one of the most unique and valuable specimens of middle age architecture which this country can produce," as this has been already confidently characterized, will, by some means, or under some form or arrangement, be preserved; since, though there are abundant examples of the more decorated Anglo-Norman style to be met with, there are extant very few such specimens of the earlier character which the remains of this venerable pile appear to exhibit. The whole character of the building, indeed, as observed by a writer in the *Doncaster Chronicle*, to which, and to the *Gazette*, we are indebted for our knowledge of this interesting discovery, "is of that rude, plain, and heavy sort, relieved only by the simplest efforts to lighten and adorn, that we may with much safety conclude this sacred edifice was erected about the period when the Saxon merged into the Norman, and before the decorative work found in the arches and other parts of almost every other Norman building in this country, had come into vogue."

There have been from time to time many and divers speculations as to what portion of the ancient church of St. Mary Magdalene was contained within the site of the late municipal building; but very few suspected that in the walls themselves was entombed nearly the whole columnar arrangement of the ancient church. Such, however, is the fact; and the remains which are now disencumbered of their more modern additions, shew pretty clearly the character of the church of St. Mary Magdalene. It appears to have originally occupied a considerable area, its length outside, from east to west, being 124 feet 7 inches; the nave, 78 feet 9 inches in length, and 23 feet 4 inches in width between the columns; the length of the chancel 37 feet, but it may have extended further eastward.

There are no traces whatever of grooves or any other contrivance for the insertion of glass in the small round-headed apertures, or electrolytic windows, if they may be so called, in the north wall, which, with its pillars and arches, constitutes the most entire portion of the remains. Neither, indeed, are there any such traces in other and larger openings of the same character in this, and in the north wall of the chancel, nor were there any in the demolished south wall.

Among the indications of past customs brought to light in this long-buried pile, are several patches of painted plaster work on the wall of the chancel. These show that the interior of this part of the building was covered with a thin coating of white plaster, and this afterwards marked out with black lines into a sort of ashlar work. On the centre of every alternate stone in this is a sort of cinque-foil, rudely painted in red, with a curved line or stalk of the same colour, coiling round the flower. On the other stones there have been some red and black characters, but these are quite defaced. Over the arch separating the nave from the chancel, and on the west side, are also some characters, or scroll work, painted in shades of dirty red and white.

It is now quite evident that there has been no tower or steeple attached to this building, unless, as is very probable, the west end wall of the chancel supported a small bell turret. The north and south walls of the nave are 3 feet thick; the west end wall 3 feet 3 in.

It is a somewhat singular circumstance, that there is not the slightest trace of a foundation having been laid for this massive structure. The huge walls and massive columns have been built upon the bare surface of the ground; and the level of the original floor of the church would correspond very nearly with that of the depressed portion of the Magda-

lene's, near the south-west corner of the Town Hall.

From the decayed state of the columns and other parts of the nave, it is clearly evident that the church or chapel of St. Mary Magdalene stood for many years, perhaps centuries, a ruin. It would also seem, from the traces of fire left on much of the stone-work in the lower part of the building, and especially the chancel, that the edifice was destroyed by fire. To this cause, probably, may be attributed its abandonment as a place of public worship, and its subsequent gradual decay, until converted into a grammar-school and town-hall.

#### THE ANTIQUITIES OF TREVES.

RAILWAYS and steam-boats have made travelling on the continent so very easy, expeditious, and inexpensive, that the sight-seeing English may be seen every where, rallying, in their erratic courses, the almost equally celebrated rambler, the German student. There is one track where all go alike to enjoy the picturesque and romantic, and this "up the Rhine." For the many thousands who visit this far-famed river, how many tens of our countrymen have made a tour up the Moselle? It is comparatively unknown even among artists; and it is surprising that the majority of the world thus follow each other in the beaten track, like a flock of sheep, turning neither right nor left, and admiring by rote all they are told to admire, totally regardless of the beauty that lies beside them unvisited, and which would more than repay the compliment of inspection. The beauty of this river, which joins the Rhine at Coblenz, has been acknowledged by all men of taste; and the Latin poet Ausonius has sung its praises at a time when Roman princes rowed on its waters; praises which have been echoed by many other "disciples of the tuneful Nine" of more modern date. Upon these banks stood the Belgian Rome, the parent of modern Treves; and here resided some of the later emperors of this all conquering people; while the immense number of Roman coins still existing, which were struck at this city, as well as the magnificent remains of buildings erected by this people, shew the great importance of the place during their dynasty. The situation of the city is most lovely, in a plain surrounded by vine covered hills, the river washing its walls; and the opposite banks, grand in an assemblage of wood and rock of the most picturesque and varied beauty. The hills on either side were dedicated by the Romans to Apollo and Mars. "Thus unto a situation peculiarly lovely they associated the most powerful influence their religion could afford; and we need not wonder if, so placed, so founded, and so protected, the rising city should soon attain to a very unusual prosperity. The importance of Treves, as long as the Roman empire flourished, is abundantly testified by numerous facts; by none more decisively than that she was repeatedly honoured with the presence of the master of the world. Many also, and high sounding, are the epithets bestowed upon her by the writers of that nation. She is designated in their works as the richest, the most distinguished, the most glorious, and the greatest, of the towns on that side of the Alps."

Thus writes Professor Wyttenebach, as translated in Dawson Turner's "Guide to the Roman Antiquities of Treves." After lamenting "how the rude hand of the spoiler, and mouldering touch of time, have destroyed what care, and art, and industry, had reared," he adds, "gone, utterly gone, are the Capitol of ancient Treves, and that senate-house, which, still venerable and many in its ruin, excited the wonder of Vecontius Fortunatus in the 6th century. No traces are to be found of our circus, said to have vied with that of Rome, nor of our imperial palaces. The triumphal arches of Valentinian and Gratian, the Forum, the Theater, and the Aqueducts, as likewise the temples and basilicas, rich in statues and frescoes, have equally disappeared; and it is by tradition alone that we are assured of the existence of that splendid entrance near the Moselle, entitled the *Porta incluta*, which, studded with golden stars, served likewise as a lighthouse. Neither do these, considerable though they be, constitute the total of our losses; many other noble works of art have